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BALLISTIC MISSILE DEFENSE ORGANIZATION 1998 TECHNOLOGY APPLICATIONS REPORT

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To defend against ballistic missile attacks, the Ballistic Missile Defense Organization (BMDO) is developing some of the world's most advanced technology. Super-sensitive heat detectors, highly precise optical components, and speedy optical data routers—these are just a few of the many cutting-edge devices being created for ballistic missile defense. And the same technology BMDO is developing provides U.S. taxpayers with a wide range of new commercial products, including more sophisticated cancer detectors, higher-quality wireless communications equipment, and more reliable automobile air bag systems. It also boosts the U.S. economy by creating new jobs and new businesses to commercialize these products.

For over a decade, BMDO's Technology Applications program has assisted small and large companies, universities, and Federal laboratories in commercializing BMDO-funded technologies. It looks at hundreds of these leading-edge technologies and invites and encourages U.S. industry to use them in the commercial marketplace. As part of its mission, the program undertakes several innovative and proactive approaches to assist companies in transferring their BMDO-funded technologies to the commercial marketplace.

The first part of this report describes these approaches and how they benefit U.S. companies conducting BMDO-funded research and development. The second part of the report highlights 24 BMDO-funded technologies that have been or are being commercialized in areas such as communications, energy, health, manufacturing, and materials. In each example, readers are told how the technology benefits U.S. taxpayers and our Nation.

For more information about technologies and organizations featured in this report, please contact:

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Continuing the Legacy of American Innovation

The spirit of innovation and commercialization has long existed in the bedrock of our Nation's technical community. We can think of two early pioneers, Thomas Edison and George Westinghouse, Jr., who captured this spirit and made a significant impact on the American economy and its people.

Edison, who earned patents for more than 1,000 inventions, including the incandescent lamp, the phonograph, the carbon telephone transmitter, and the motion-picture projector, collaborated with a group of investors to form the Edison Electric Light Company, the predecessor of today's General Electric (GE) Company. Westinghouse invented a system of air brakes that made travel by train safer and later founded Westinghouse Electric Company which, coincidentally, became a competitor to GE.

Over the years, these two companies maintained the vision and entrepreneurial enthusiasm of their founders by expanding their businesses around new products and processes. A measure of their innovation success comes from the U.S. Patent and Trademark Office, which reports that from 1963 to 1984 GE received more U.S. patents than any other American company; Westinghouse was ranked fifth on the list, behind AT&T, IBM, and the U.S. Navy.¹

The Ballistic Missile Defense Organization (BMDO) plays a major role in continuing the legacy of American innovation. It funds not only large companies such as GE and Westinghouse, but also small companies led by individuals with a spirit of innovation and commercialization much like that exhibited by Edison and Westinghouse. As you read through this report, keep in mind that BMDO has an enduring commitment to innovative technology development, together with a strong emphasis on the transfer and commercialization of this technology.

¹In 1995, Westinghouse acquired CBS Corporation; in 1998, however, Morrison Knudsen Corporation and BNFL formed a joint venture to acquire Westinghouse from CBS.